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New data on the many-plumed moths (Alucitidae, Lepidoptera) of the Far East of Russia

Peter Ustjuzhanin[1], Vasily Kovtunovich[2]

1 *Altai State University, Lenina 61, Barnaul, 656049, Russia; petrust@mail.ru*

2 *Moscow Society of Nature Explorers, Bolshaya Nikitskaya 6, Moscow, 103009, Russia; vasko-69@mail.ru*

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Abstract. *Orneodes zonodactyla* var. *eumorphodactyla* Caradja, 1920 is regarded as a valid species with the following combination: *Pterotopteryx eumorphodactyla* (Caradja, 1920), comb.nov. *Alucita sakhalinica* Zagulajev, 1995 and *Pterotopteryx koreana* Bong-Kyu Byun, 2006, are synonymized with *Pterotopteryx eumorphodactyla* (Caradja, 1920). New data on the distribution of *P. eumorphodactyla* and *Alucita ussurica* Ustjuzhanin, 1999 in the Russian Far East are given.

Introduction

The Alucitidae comprise 216 species in 9 genera distributed around the world (van Nieukerken et al. 2011). The first Russian Far East representative of Alucitidae was described by Prince Aristide Caradja from the neighborhood of Radde Village as *Orneodes zonodactyla* var. *eumorphodactyla* Caradja, 1920. It was given species status as *Alucita eumorphodactyla* (Caradja, 1920) by Gielis (2003). The species was not listed in the Alucitidae chapter of the "Key to the Insects of the Russian Far East" (Ustjuzhanin 1999b), but it was included as *Alucita eumorphodactyla* in the "Catalogue of the Lepidoptera of Russia" (Ustjuzhanin and Kovtunovich 2008).

Pterotopteryx sakhalinica (Zagulajev, 1995) was described from the southern part of Sakhalin Island based on a series of 10 specimens (Zagulajev 1995). Later, we found that this species had a rather wide range, occurring not only on Sakhalin, but also in the southern Kurile Islands and the continental part of the Russian Far East, from Khasan District in the south to Nikolayevsk-on-Amur in the north (Ustjuzhanin and Kovtunovich 2008). More recently, Ustjuzhanin (1999a) described *Alucita ussurica* Ustjuzhanin, 1999 from the southern part of Primorsky Krai, currently its only known locality.

Five species of Alucitidae were reported from Japan (Hashimoto 1984). Two of them, *Alucita japonica* (Matsumura, 1931) and *Pterotopteryx spilodesma* (Meyrick, 1907), inhabit Hokkaido Island, the nearest territory to the Russian Far East. Both can be easily distinguished from *Alucita ussurica* and *Pterotopteryx eumorphodactyla* based on external characters and genitalia morphology. Three species have been recorded from Korea (Byun 2006): *Alucita japonica*, *Pterotopteryx spilodesma*, and the newly described *Pterotopteryx koreana* Byun, 2006.

Our re-examination of type specimens and study of additional material allow us to make some corrections and additions to the taxonomy and distribution of the Alucitidae species found in the Russian Far East.

Abbreviations

MGAB Grigore Antipa National Museum of Natural History (Bucharest, Romania).
ISEA Institute of Systematics and Ecology of Animals (Novosibirsk, Russia).
CUK Collection of P. Ustjuzhanin and V. Kovtunovich (Novosibirsk and Moscow, Russia).
ZISP Zoological Institute (St. Petersburg, Russia).

Taxonomic part

Pterotopteryx eumorphodactyla (Caradja, 1920), comb. n.

Figs 1–6

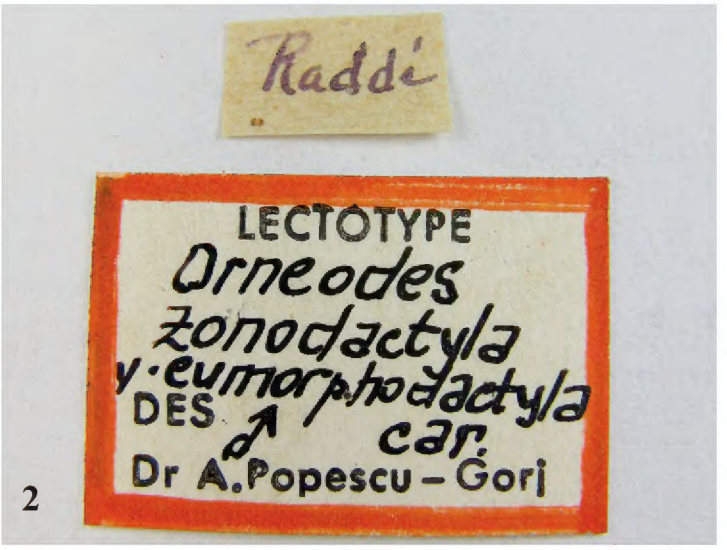
Orneodes zonodactyla var. *eumorphodactyla* Caradja, 1920: 88. Type locality: Radde, Amur Region, Russia.
Alucita eumorphodactyla: Gielis 2003: 110; Ustjuzhanin and Kovtunovich 2008: 150.
Alucita sakhalinica Zagulajev, 1995: 111. Type locality: South Sakhalin, Russia. Syn. nov. *Pterotopteryx koreana* Byun, 2006: 42. Type locality: Unduryeong, Mt. Gyebang, Province Gangweon-do, Korea. Syn. nov.

Material. Russia. South Sakhalin: Pik-Chekhova, h – 500 m, 2.06.1988, 1♂ (holotype), leg. M. Nesterov (ZISP); same data as holotype, but 2.06.1988, 4♂,2♀, 12.06.1988, 1♂, 1♀, 21.06.1988, 1 ♂ (paratypes), leg. M. Nesterov (ZISP); Yuzhno-Sakhalinsk, 30.vi.–3.vii.1983, 7 ex., leg. S. Sinev (ZISP); Sinegorsk, 3.vii.1991, 1♀, leg. A. Kupriyanov (CUK); Novoalexandrovka village, 30.vi.1991, 1♂, leg. A. Kupriyanov (CUK); Urozhaynoe village, 22–23.vi.1989, 3♂, leg. V. Dubatolov (ISEA). Kurile Islands: Kunashir Isl., Sernovodsk, 12.vii.1967, 2 ex., leg. Zabello (ZISP); Shikotan Isl., 20.vi.1973, 1♂, 1♀, leg. I. Kerzhner (ZISP). Khabarovskii Krai: 20 km W of Nikolayevsk-on-Amur, Archangel'skoe village, 15–18.vii.2009, 6 ex., leg. V. Dubatolov (ISEA, CUK); Bolshekhekhtsirskii Nature Reserve, Bychikha village, 26.v.2006, 1 ♂, leg. V. Dubatolov (CUK); Pivan' village, 31.v. 2008, 1♂, leg. A. Syatchina (CUK). Amur Region: Bastak Nature Reserve, 7–15.vi. 2004, 1♂, 1♀, leg. A. Streltzov (CUK); Blagoveshchensk, 1.vi. 2012, 1♂, leg. A. Streltzov (CUK). Primorsky Krai: Barabash village, 16-19.viii, 2008, 1 ♂, leg. A. Streltzov, P. Osipov, E. Malikova (CUK); 20 km E of Ussuriisk, Gornotajozhnoe village, 1.vi.1994, 1 ♂, leg. V. Dubatolov (ISEA).

Distribution. Russian Far East: Sakhalin, southern Kurile Islands, Khabarovskii Krai, Amur Region, Primorsky Krai. Korean Peninsula.

Life history. Biology unknown. Flight period: V–VII. Probably develops in two generations.

Remarks. The type series of *Orneodes zonodactyla* var. *eumorphodactyla* Caradja, 1920 consists of six specimens held in MGAB. Dr. Mihai Stănescu, Lepidoptera collection manager in this museum, kindly sent us the abdomens of two paralectotypes for genitalia dissection. Our study of the male genitalia as well as external morphology revealed a number of diagnostic characters for the genus *Pterotopteryx* Hannemann, 1959 (third segment of labial palpus short, less than 1/3 as long as second segment; all five forewing R veins developed; valva



Figures 1–6. *Pterotopteryx eumorphodactyla* (Caradja). **1.** Lectotype, male. **2.** Lectotype label. **3.** Paralectotype, male. **4.** Paralectotype, female. **5.** Paralectotype, male genitalia. **6.** Paralectotype, female genitalia. (Photo: M. Stănescu,1–4 and V. Kovtunovich, 5, 6)

with broad base; uncus undivided apically; gnathos acute apically; phallus nearly straight with spiniform cornuti in vesica) which provide ample reason for treating this taxon as a valid species within *Pterotopteryx*. In addition, all characters studied revealed the obvious conspecificity of *Pterotopteryx eumorphodactyla* with the recently described *Alucita sakhalinica* Zagulajev, 1995 (Zagulajev 1995: 111–115, figs 4–5) and *Pterotopteryx koreana* Byun, 2006 (Byun 2006: 42, figs 6–9). In particular, the following character states are diagnostic. The wings are yellowish ashy, the middle and outer bands are well defined, and there are several contrasting spots on the costal margin of the forewing, near the base. In the male genitalia, the uncus is laterally narrow and its apex is lanceolate in frontal aspect, the valvae are wide and sclerotized near the base, narrow and membranous to the apex, and the phallus is slightly curved and with well-developed cornuti. In the female genitalia, the antrum is cup-shaped, the bursa copulatrix is oval with a rounded signum, and the ductus is covered with small spines.

Alucita ussurica Ustjuzhanin, 1999

Alucita ussurica Ustjuzhanin, 1999: 2. Type locality: Gornotajozhnoe, Primorsky Krai, Russia.

Material. Russia. Primorsky Krai: 20 km E of Ussuriisk, Gornotajozhnoe village, 11.vi. 1983, 1♂ (holotype), leg. S. Sinev (ZISP); same locality, 12.vii.1990, 1♂, 11.vi.1983, 2♂ (paratypes), leg. S. Sinev (ZISP); 8.vii.1990, 1♀ (paratype), leg. P. Ustjuzhanin (CUK); Kamenushka village, 12.vii.1990, 1♂ (paratype), leg. P. Ustjuzhanin, S. Zakharov (ISEA); Kedrovaya Pad' Nature Reserve, 14 -15.vii.1984, 1♂, 2 ♀ (paratype), leg. A. Lvovsky (ZISP); same locality, 25.vii.1998, 2♂, 1♀ (paratype), leg. S. Sinev (ZISP); Ananievka River headwaters, 7.vii.1982, 1♂ (paratype), leg. S. Sinev (ZISP); Khasan district, Zanadvorovka village, 4-19.vii.2004, 2♂, leg. A. Streltzov, P. Osipov, D. Filatov (CUK).

Distribution. Russian Far East: south of Primorsky Krai.

Life history. Biology unknown. Flight period: VI–VII. Probably develops in two generations.

Remarks. This species, previously known only from its type locality, is actually more widely distributed in the region. In conclusion, only two species of many-plumed moths are known in the south of the Russian Far East: *Pterotopteryx eumorphodactyla* and *Alucita ussurica*.

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